# (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization International Bureau





(43) International Publication Date 8 July 2004 (08.07.2004)

**PCT** 

# (10) International Publication Number WO 2004/057515 A3

(51) International Patent Classification<sup>7</sup>:

G06F 19/00

(21) International Application Number:

PCT/IB2003/005974

(22) International Filing Date:

12 December 2003 (12.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/434,547 19 Decem

19 December 2002 (19.12.2002) U

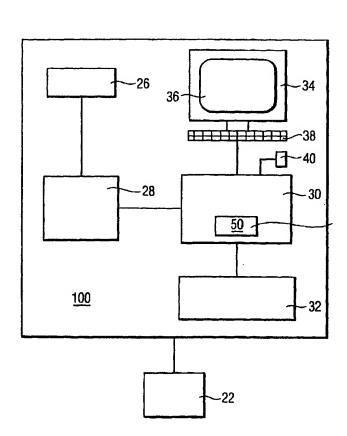
- (71) Applicant (for all designated States except US): KONIN-KLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).
- (72) Inventors: and
- (75) Inventors/Applicants (for US only): ALSAFADI, Yasser [US/US]: P.O. Box 3001, Briarcliff Manor, NY

10510-8001 (US). ESHELMAN, Larry [US/US]; P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US). ZHU, Katie [CN/US]; P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US). YASSIN, Amr [EG/US]; P.O. Box 3001, Briarcliff Manor, NY 10510 (US).

- (74) Common Representative: KONINKLIJKE PHILIPS ELECTRONICS N.V.; c/o Michael E. MARION, P.O. Box 3001, Briarcliff Manor, NY 10510-8001 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR SELECTING THE OPERATING PARAMETERS FOR A MEDICAL IMAGING SYSTEM



(57) Abstract: A system is provided for guiding the selection of a value for each of a plurality of parameters needed to perform a procedure with a medical system (100). The system includes a first knowledge base (210) comprising procedures and treatment regimes, a second knowledge base (212) comprising patient information and therapy history, and a third knowledge base (214) comprising clinical guidelines. A domain ontology (220) provides the semantic mapping between information in the first, second, and third knowledge bases. A system configuration database (226) contains physical characteristics pertaining to the medical system and a system characteristics database (228) contains mathematical formulas and algorithms for calibrating the medical system based on the data in the system configuration database. An interference engine (224) is also provided for generating a set of parameters based on the information in the first, second, and third knowledge bases, the system configuration database, and the system characteristics database.



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

### Declaration under Rule 4.17:

 as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations

#### Published:

with international search report

- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 16 June 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

mation on patent family members	1	ati	onal	Application No
mation on patent family members			В	03/05974
			,	

				00,000,4
Patent document cited in search report	Publicati date	on	Patent family member(s)	Publication date
US 2002169636	A1	EP IL JP WO US	0814864 A1 117128 A 11502132 T 9628209 A1 5836910 A	07-01-1998 17-08-1999 23-02-1999 19-09-1996 17-11-1998

ational Application No

		Inform	ation on patent family r	nembers			03/05974
Patent do cited in sea			Publication date		Patent family member(s)		Publication date
US 4835	690	Α	30-05-1989	NON	E		
US 6205		B1	20-03-2001	NON US US US US AU CAP JP WO US US US US US	E 5999639 6650766 2001008562 2002081006 747189 1466899 2309497 1032914 2001525579 492858 9928853 6137898 6115488 6091841 6167146	5 B1 2 A1 5 A1 6 B2 7 A1 7 A1 8 A1 8 A1 8 A	07-12-199 18-11-200 19-07-200 27-06-200 09-05-200 16-06-199 10-06-199 01-07-200 11-12-200 01-06-199 24-10-200 05-09-200 18-07-200
				AU AU BR CA CN EP JP NO WO US	741337 9295598 9812021 2297986 1273516 1009283 2003532934 20000914 9909887 5996639	B2 A A A1 A A1 T A	26-12-2000 29-11-2001 16-03-1999 26-09-2000 04-03-1999 15-11-2000 21-06-2000 05-11-2003 24-02-2000 04-03-1999 07-12-1999
US 63359	179 	B1 	01-01-2002	JP	11235334	A	31-08-1999
EP 06095		Α	10-08-1994	US EP JP	5270530 0609500 6217966	A1	14-12-1993 10-08-1994 09-08-1994
EP 10944	16	Α	25-04-2001	US EP JP	6418334 1094416 2001175762	A2	09-07-2002 25-04-2001 29-06-2001
US 20021	69636	A1		US CA CN CZ EP HU NO AU CA EP JP WO AU CA DE DE	5941846 5713856 2434322 1493049 20032608 1371003 0303338 20033753 02069099 730203 7837298 2293640 0991445 22936450 703178 4917296 4917296 4917296 69630946	A A1 A3 A2 A2 A4 A1 A1 A1 A1 A1 A1 B2 A1	24-08-1999 03-02-1998 06-09-2002 28-04-2004 14-07-2003 29-12-2003 25-08-2003 06-09-2002 01-03-2001 30-12-1998 17-12-1998 12-04-2000 19-02-2002 17-12-1998 18-03-1999 02-10-1996 19-09-1996 15-01-2004 21-10-2004

# INTERNATIONAL SEARCH REPORT

IB 03/05974

C.(Continu	ation) DOCUMENTS CO ERED TO BE RELEVANT	IB 03/05974
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 335 979 B1 (SETO HIROMITSU ET AL) 1 January 2002 (2002-01-01) column 1, line 60 - column 2, line 16 column 2, line 66 - column 4, line 39 column 4, line 48 - line 62 column 5, line 50 - column 6, line 12	1-27
A	EP 0 609 500 A (EASTMAN KODAK COMPANY) 10 August 1994 (1994-08-10) page 4, line 10 - line 19 page 6, line 18 - line 22 page 7, line 13 - line 37 page 8, line 4 - page 11, line 51	1-27
A	EP 1 094 416 A (GENERAL ELECTRIC COMPANY) 25 April 2001 (2001-04-25) page 3, line 4 - line 21 page 3, line 40 - page 4, line 43 page 4, line 50 - page 6, line 12	1-27
A	US 2002/169636 A1 (EGGERS ET AL) 14 November 2002 (2002-11-14) paragraph '0010! - paragraph '0012! paragraph '0022! - paragraph '0023! paragraph '0026! - paragraph '0039! paragraph '0065! - paragraph '0070!	1-27
		·

## INTERNATIONAL SEARCH REPORT

ational Application No 03/05974

A. CLASSIFICATION OF SUBJECT MAY IPC 7 G06F19/00

According to International Patent Classification (IPC) or to both national classification and IPC

#### **B. FIELDS SEARCHED**

 $\label{eq:minimum} \begin{array}{ll} \mbox{Minimum documentation searched (classification system followed by classification symbols)} \\ \mbox{IPC 7} & \mbox{G06F} \end{array}$ 

Documentation searched other than minimum documentation to the extent that such documents as included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, MEDLINE, COMPENDEX

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 835 690 A (GANGAROSA ET AL) 30 May 1989 (1989-05-30) column 2, line 30 - column 3, line 43 column 4, line 3 - line 68 column 5, line 15 - column 6, line 21 column 6, line 27 - column 7, line 43 column 7, line 55 - column 9, line 21	1-27
X	US 6 205 236 B1 (ROGERS STEVEN K ET AL) 20 March 2001 (2001-03-20) column 2, line 20 - line 56 column 3, line 50 - column 4, line 36 column 12, line 1 - column 14, line 33 column 14, line 65 - column 16, line 50/	1-27

X Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents:      A* document defining the general state of the art which is not considered to be of particular relevance      E* earlier document but published on or after the international filing date      L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)      O* document referring to an oral disclosure, use, exhibition or other means      P* document published prior to the International filing date but later than the priority date claimed	<ul> <li>"T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</li> <li>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</li> <li>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</li> <li>"&amp;" document member of the same patent family</li> </ul>
Date of the actual completion of the international search  8 April 2005	Date of mailing of the international search report  25/04/2005
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentiaan 2  NL - 2280 HV Rijswijk  Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  Fax: (+31-70) 340-3016	Authorized officer  Barba, M